Space Weather Forecast

Issued on Friday 27 September 2024 at 01:26 Local

This forecast provides a four-day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: Chance of Moderate flares.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Moderate with one Moderate flare observed at 26/2312 UTC from a small sunspot newly arrived approaching the southeast limb. There are eleven sunspot regions visible , however these are all relatively small and simple regions with only limited development. The largest region remains relatively simple in the southeast. Two new regions are visible on the east limb, one region in the northwest is becoming harder to observe and another region rotated behind the northwest limb through the period.

There were no Earth-directed CMEs (coronal mass ejections) .

Solar Wind / Geomagnetic Activity: Fast wind conditions eased, with observed speeds decreasing from slightly elevated levels around 490 km/s to end the period at background levels around 360 km/s. The strength of the magnetic field was weak throughout. The north-south component was mainly weakly southward. Only brief periods of weakly northward (positive) field occurred. Geomagnetic activity was Unsettled to Active until 26/1800 UTC, then Quiet.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) remained at background levels with no Solar Radiation Storms observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Low to Moderate activity is expected, with a chance of further isolated Moderate flares.

Solar Wind / Geomagnetic Activity: There are no Earth-directed CMEs, with the previous anticipated CME arrival likely having missed. Solar winds are expected to remain at background levels until a possible weak enhancement arrives either late day 2 or day 3 (28-29 Sep), from a narrow coronal hole feature. However, this is low confidence. Mainly Quiet geomagnetic activity is expected with Unsettled intervals, but with a chance for Unsettled to Active periods from any temporary fast wind enhancement late day 2-3 (28-29 Sep).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is forecast to persist at background with just a very slight chance of solar radiation storms occurring.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 370 900 0100 Email: enquiries@metoffice.gov.uk

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Geomagnetic Storms

Geomagnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	1	10	10	1
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X-Ray Flares

X-Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 (M Class)	Yes	50	50	50	50
Very Active	R3-R5 (X Class)	No	5	5	5	5

Solar Radiation Storms (High Energy Protons)

Radiation Storms Probability (Exceedance)	Level ($cm^{-2}sr^{-1}s^{-1}$)	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	5	5	5	5
Very Active	≥ S3 *	No	1	1	1	1
* S3 ≥ 10 MeV ≥ 1000 pfu and/or 50 MeV ≥ 10pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)						

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